

Appendix D

GENERAL AVIATION AIRPORTS

GROUND VEHICLE OPERATIONS

TRAINING PROGRAM

Section 1. Airport Driving Rules and Regulations

- I. Applicability. This training program applies to all users of, and persons on any portion of, the property owned or controlled by County of San Diego. No persons are exempt from airport operating training requirements for operating a vehicle on the movement areas of an airport. Master Lessees shall be responsible for the education, dissemination of, accessibility to, and compliance with this program and the rules and regulations associated with this program by their employees, guests, users, subtenants and vendors.
- II. Violation of Rules—Penalties and Suspension of Driving Privileges. Any person who does not comply with any of the provisions of the Rules and Regulations, or any lawful order issued pursuant thereto, will be subject to progressive penalties for repeat violations. The penalties may include denied use of the Airport by the County of San Diego in addition to the penalties described pursuant to Federal, state, or local authorities.
 - a) Penalties for failure to comply with the movement area Motor Vehicle/Equipment Rules and Regulations shall consist of written warnings, suspension of airside driving privileges, and/or revocation of movement area driving privileges. Receipt of two written warnings by an operator of a vehicle in any 12-month period will automatically result in suspension of movement area driving privileges. Receipt of three written warnings in any 12-month period will automatically result in revocation of airside driving privileges.
 - b) Based on an evaluation of the circumstances or the severity of a particular incident or incidents, the County of San Diego reserves the exclusive right to assess any penalty it deems appropriate at any time to any individual authorized to operate a vehicle on the movement area without regard to prior operating history.
 - c) Suspension of movement area driving privileges shall be no less than 90 calendar days and no greater than 365 calendar days.
 - d) The County of San Diego will provide a copy of all written warnings issued to an operator to the Master Lessee and the local manager of the company owning or in possession and control of the vehicle or vehicles involved in the violation(s).

III. Remedial Training. The County of San Diego will require any individual involved in a runway incursion, deviation or other vehicle incident to complete remedial ground vehicle operations training.

IV. Driver Requirements on the Movement Area of an Airport.

a) Driver Requirements.

- i. All applicants must satisfactorily complete the applicable driver's training program before receiving a movement area driver's license.
- ii. All applicants must pass the written test with a grade of at least eighty percent. Applicants who do not pass the written test may retake the test after additional study and a ten day period.
- iii. No vehicle shall be operated on the movement area unless:
 - a. The driver is authorized to operate the class of vehicle by an appropriate government-licensing agency.
- iv. No person operating or driving a vehicle on any aircraft ramp shall exceed a speed greater than 20 miles per hour. Factors including, but not limited to, weather and visibility shall be taken into consideration when determining safe operating speed.
- v. No vehicle operator shall enter the movement area:
 - a. Without first successfully completing the driver training program and a clearance from the ATCT to enter the movement area. During the times when the ATCT is closed, the driver shall broadcast their intentions on CTAF;
 - b. Unless equipped with an operable two-way radio in communication with the ATCT; or escorted by someone who is.
- vi. No person shall:
 - a. Operate any vehicle that is overloaded or carrying more passengers than for which the vehicle was designed.
 - b. Ride on the running board or stand up in the body of a moving vehicle.
- vii. A vehicle guide person is required whenever the view of the vehicle operator is restricted.
- viii. No fuel truck shall be brought into, stored, or parked within 50 feet of a building. Fuel trucks must not be parked within 10 feet from other vehicles, edge to edge.

- ix. Container carriers and tugs shall tow no more carts, pods, or containers than are practical, under control, tracking properly, and safe.
- x. When not serving aircraft or undertaking their intended functions, ramp vehicles and equipment shall be parked only in approved areas.
- xi. No person shall park a vehicle in a movement area, safety area, or in a manner that obstructs or interferes with operations in the aircraft movement area or apron area.
- xii. No person shall park, or leave unattended any vehicles, or other equipment that interfere with the use of a facility by others or prevent movement or passage of aircraft, emergency vehicles, or other motor vehicles or equipment.
- xiii. No person shall park a vehicle or equipment within 20 ft. of a fire hydrant or in a manner that prohibits a vehicle from accessing the fire hydrant.
- xiv. No person shall operate a vehicle or other equipment on County of San Diego property under the influence of alcohol or any drug that impairs, or may impair, the operator's abilities.
- xv. Each vehicle operator using an airport perimeter (security) gate shall ensure the gate closes behind the vehicle prior to leaving the immediate vicinity of the gate. The vehicle operator shall also ensure no unauthorized vehicles or persons gain access to the airside while the gate is open.
- xvi. Vehicle operators shall not operate vehicles in a reckless or careless manner. A reckless or careless manner is one that intentionally or through negligence threatens the life or safety of any person or threatens damage or destruction to property.
- xvii. Vehicles shall not enter the movement area or cross runways unless the operator of the vehicle has received required training and authorization from the County of San Diego to operate on the movement area. Whenever possible, all airport vehicles shall use the airport perimeter and service roads to transition between areas on the airport.
- xviii. Each vehicle operator is responsible for the activities of each vehicle passenger on the airside of the airport.

b) Vehicle Regulations

- i. No vehicle shall be operated in the movement area unless it has proper registration.
- ii. All vehicles operated in the movement must have vehicle liability insurance.

- iii. Carts or pieces of equipment being towed after darkness must have side and rear reflectors or rear lights.
 - iv. No vehicle shall be permitted in the movement area unless:
 - a. It is properly marked, as outlined in FAA Advisory Circular 150/5210-5, *Painting, Marking, and Lighting of Vehicles Used on an Airport*.
 - b. It is in sound mechanical condition with unobstructed forward, side and rear vision from the driver's seat.
 - c. It has the appropriately rated and inspected fire extinguishers (service vehicles and fuel trucks).
 - d. It has operable vehicle lights.
 - v. Vehicles operating on the movement area shall be equipped with an operating amber rotating beacon or orange and white checkered flag for daytime operations.
 - vi. Vehicles operating on the movement area shall be equipped with an operating amber rotating beacon for nighttime operations.
 - vii. All aircraft refueling vehicles and any other vehicle 8-feet or more in width, shall be equipped with a flashing amber beacon and flashing hazard lights that are activated at all times when operating in the movement areas.
 - viii. No person shall operate any motor vehicle that is in such physical or mechanical condition as to endanger persons or property or that the County of San Diego considers an endangerment.
- c) Vehicular Accidents. Operators of vehicles involved in an accident on the airport that results in injury to a person or damage to an aircraft, airport property, or another vehicle shall:
- a) Immediately stop and remain at the scene of the accident.
 - b) Render reasonable assistance, if capable, to any person injured in the accident.
 - c) Report the accident immediately to the County of San Diego before leaving the scene.
 - d) Provide and surrender the following to any responding County of San Diego personnel: name and address, ground vehicle operator's card, government driver's license, proof of liability insurance and any information such personnel need to complete a motor vehicle accident report.

Section 2. Driving on the Non-Movement Areas

- I. Non-movement areas include taxiways, aprons, and other areas **not** under control of the ATCT. Anyone authorized to operate a motorized vehicle in the movement area, may do so on the non-movement areas without being in positive radio contact with the ATCT. These areas include:
 - a) Service roads
 - b) Cargo aprons
 - c) General aviation aprons
 - d) Air carrier apron(s)
- II. Driving. Operating within the ramp areas require the vehicle driver to exercise extreme caution as aircraft are often moving, aircraft passengers may be walking from an aircraft to the gate, and noise levels can be high. Vehicle drivers should:
 - I. Never drive between safety cones or across delineated passenger walkways.
 - II. Watch cockpit blind spots—pilots typically cannot see behind or below the aircraft.
 - III. Avoid jet blast or prop wash, which can blow debris or overturn vehicles.
 - IV. Be aware and avoid moving propellers that can cause damage, injury, or death.
 - V. Be aware of other vehicle movements—you may not hear them approaching due to aircraft engine noise.
 - VI. Yield to aircraft, passengers, and emergency vehicles, which ALWAYS have the right-of-way on any portion of the airport.

When traveling on the apron, always use designated vehicle service roads. This policy helps to establish a predictable order to vehicle movements in congested areas and helps to ensure their visibility to aircraft and other vehicles.

Parked aircraft may still have their engines running, so be aware of the hazards of jet blast or prop wash, which may overturn vehicles. Before an aircraft engine is started, the aircraft's red flashing beacons should be on. In some instances, propellers and engine spinners are marked to indicate when the engine is operating. A pilot's ability to maneuver quickly on the ground is limited. Propellers and jet engines can cause significant damage and injury to personnel. In addition, cockpit visibility prohibits the pilot from seeing under the nose or behind the aircraft and limits the pilot's ability to avoid ground vehicles.

- III. Nighttime and Poor Weather Driving Conditions. Poor weather conditions (fog, rain, etc.) might obscure visual cues, roadway markings, and airport signs. Vehicle operators should remain vigilant of their surroundings and operating boundaries. Watch out for aircraft operating in the vicinity under low-visibility conditions. There are additional risks present under these conditions.

Section 3. Driving on the Movement Areas

Drivers who are authorized to drive on the movement area require more training and vigilance since there are dangers associated with this area that are not present on non-movement areas. In addition to the principals for driving on the non-movement area, drivers who have access to the movement area must be cognizant of the meaning of airfield signs, markings, and lighting

configurations. Additionally, they must be able to communicate with air traffic control (ATC) and be able to follow ATC directions.

- I. **ATCT Control.** Movement areas are defined as the runways, taxiways, and other areas of the airport that are used for taxiing, hover taxiing, air taxiing, and takeoff and landing of aircraft, exclusive of loading ramps and aircraft parking areas. Movement areas are considered “positive control,” meaning that all vehicle operators will need permission from ATC before entering the area.
- II. **Authorized Vehicles.** Only those vehicles necessary for airport operations may enter a movement area. Therefore, fuel trucks, catering trucks, and other nonessential vehicles should not be permitted to enter these areas. Exceptions may include County of San Diego-authorized vehicles with appropriately trained personnel and emergency vehicles.
- III. **Taxiways.**
 - a) Designations. Aircraft use taxiways to move to and from the aprons and the runways.
 - b) Taxiways are designated by letters or by a letter/number combination such as A, B, G2, or B3.
 - c) Lighting. Taxiways are lighted with **blue** edge lighting and/or reflectors. (*Use airport-specific example here.*)
 - d) Signs. The signs used on taxiways are direction, destination, location, and taxiway ending marker signs.

Direction and Designation Signs have **black lettering** and a **directional arrow** or **arrows** on a **yellow background**. The arrow indicates the direction to that taxiway, runway, or destination.



Taxiway Directional Sign

Location Signs have **yellow lettering** on a **black background**. The location sign below indicates that the operator of the vehicle/equipment is located on the named taxiway or runway.



Taxiway Location Sign

Runway Safety Area (RSA)/Object Free Zone (OFZ) and Runway Approach Area Boundary Signs, when required, identify the boundary of the RSA/OFZ or the runway approach area to the pilot and vehicle operator. The driver can use these signs to identify when the vehicle is clear of the runway environment. It has a black inscription that depicts the holdline marking on a **yellow background**.



RSA/OFZ and Runway Approach Boundary Sign

- e) **Markings.** Pavement markings on taxiways are always **yellow**. The taxiway centerline is painted on all taxiways. On the edges of some taxiways, there is a solid, double yellow line or double-dashed line. If pavements are usable on both sides of the line, the lines will be dashed; if not, the lines will be solid.

Runway Holding Position Markings are located across each taxiway that leads directly onto a runway. These markings are made up of **two solid lines** and **two broken yellow lines** and denote runway holding position markings. These markings are always co-located with a Runway Holding Position Sign. A vehicle operator must not cross from the solid-line side of the marking without first obtaining clearance.



Runway Holding Position Marking

Non-Movement Area Boundary Markings consist of **two yellow lines** (one solid and one dashed). The solid line is located on the non-movement area side, while the dashed yellow line is located on the movement area side. A vehicle operator is not to cross from the solid-line side without first contacting the ATCT and obtaining a clearance to operate on the movement area.



Non-Movement Area Boundary Marking

Instrument Landing System (ILS) Critical Area Holding Position Markings are comprised of **two parallel yellow lines** with lines running perpendicular between the two parallel yellow lines. These markings identify the location on a taxiway where an aircraft or vehicle is to stop when it does not have clearance to enter ILS critical areas. The ILS critical area must remain clear, especially in inclement weather. If a vehicle proceeds past this ILS marking, it might cause a false signal to be transmitted to the landing aircraft.



ILS Hold Position Marking

IV. Runways:

- a) Designations. Runways are areas where aircraft land and take off. Runways are always designated by a number such as 1 or 19. The number indicates the compass heading of the runway. An aircraft taking off on runway 19 is headed 190 degrees.
- b) Lighting. Runways are lighted with a variety of colored lights.
 - **Runway Edge-lights** are **white**. If the runway has an instrument approach, the last 2,000 feet of the runway will be yellow in color.
 - **Runway Centerline Lights** are **white** except for the last 3,000 feet of the runway, where they begin to alternate **red** and **white**. For the last 1,000 feet of runway the centerline lights are all **red**.
 - **Runway Touchdown Zone Lights** are **white**.
 - **Runway End/Threshold Lights** are split lenses that are **red/green**. Green for the approach end of the runway and red for the departure end of the runway.
- c) Signs:

Mandatory Holding Position Signs for Runways have **white numbering/lettering** on a **red background with a white border**. These are located at each entrance to a runway and at the edge of the runway safety area/obstacle-free zone and are co-located with runway holding position markings. **Do not proceed beyond these signs until clearance is given by the ATCT to enter onto a runway or taxiway.**



Runway Hold Sign

Holding Position Signs for Runway Approach Areas. The inscription on a sign for a runway approach area is the associated runway designation followed by a dash and the abbreviation APCH for approach. This sign has **white numbering** on a **red background with a white border**. The sign is installed on taxiways located in approach areas where an aircraft on a taxiway would either cross through the runway safety area or penetrate the airspace required for the approach or departure runway.



Approach Sign

Runway Distance Remaining Signs provide distance remaining information to pilots during takeoff and landing operations. They have **white numbering** on a **black background**. The **number on the sign provides the remaining runway length in 1,000-foot increments**.



Runway Distance Remaining Signs

Runway Exit Sign is a destination sign located prior to the runway/taxiway intersection on the side and in the direction of the runway where the aircraft is expected to exit. This sign has **black lettering** and a **directional arrow** on a **yellow background**.



Runway Exit Sign

- d) Markings. **Pavement markings on a runway are white.** Runway Threshold Markings and Runway Threshold Bars, Runway Aiming Point Markings, Runway Designation Markings, Runway Touchdown Zone Markings, Runway Centerline Markings, Runway Side Stripes, and Displaced Threshold Markings are white. The only nonwhite lines on a runway are yellow lead-in/-off lines that extend from the runway centerline and hold lines for a specific operation known as land and hold short.

Section 4. Communications

- I. Any vehicle driving on the movement areas (runways and taxiways) must be in contact with the ATCT or capable of monitoring and transmitting on the CTAF. Vehicle operators must always monitor the appropriate radio frequency when in the movement areas. Permission must be requested and clearance given prior to driving on a movement area. A vehicle that is equipped with a radio may escort vehicles without radios.
- II. The ATCT controller may use separate or common radio frequency to control all ground traffic, vehicle and aircraft, on the movement areas. The frequency is only to be used to get clearance onto and off the movement areas. When the ATCT is closed, the CTAF should be used to announce a driver's intentions when operating within the movement area.
- III. Phraseology. Vehicle operators must contact the ATCT ground controller each and every time they proceed onto or leave the movement area. When proceeding onto a movement area,

vehicle operators must tell the controller three things: **WHO you are, WHERE you are, and WHAT your intentions are.** Vehicle operators must always acknowledge all communications so ground control and other persons know that the message was received. **Vehicle operators must always give aircraft and ground control transmissions priority unless an emergency exists.** Very high frequencies are for the primary use of aircraft and ATCT personnel. Some typical transmissions are as follows:

- ➔ (AIRPORT NAME) ground control, this is Airport 21 at Charlie 6. Request permission on all taxiways for a pavement inspection.”
- ➔ (AIRPORT NAME) ground control, this is Airport 21 at Taxiway Alpha. Request clearance south on runway 19 right for a light inspection.”

Reply transmissions may be brief, such as—

- ➔ ATCT: “Airport 21, hold short of runway 19 right.”
- ➔ Driver: “Airport 21 holding short of runway 19 right.”
- ➔ ATCT: “Airport 21 cleared south on runway 19 right.”
- ➔ “Please expedite, landing aircraft on a 10 mile final for runway 19 right.”
- ➔ Driver: “Airport 21 cleared south on runway 19 right, will expedite.”
- ➔ Driver: “Ground control, Airport 21 is clear of runway 19 right.”

NOTE: If you are unsure what the controller has said, or if you don’t understand an instruction, ask the controller to repeat it. Good communications only occur when each party knows and understands what the other is saying.

IV. Common Use Phrases

What Is Said:	What It Means:
Acknowledge	Let me know you have received and understand this message.
Advise Intentions	Let me know what you plan to do.
Affirmative	Yes.
Correction	An error has been made in the transmission, and the correct version follows.
Go Ahead	Proceed with your message only. Do not move.
Hold/Hold Short	Phrase used during ground operations to keep a vehicle or aircraft within a specified area or at a specified point while awaiting further clearance from air traffic control.
How do you hear me?	Question relating to the quality of the transmission or to determine how well the transmission is being received.
Immediately or without delay	Phrase used by ATC when such action compliance is required to avoid an imminent situation.
Negative	"No" or "permission not granted" or "that is not correct."
Over	My radio transmission is ended, and I expect a response.
Read Back	Repeat my message to me.
Roger	I have received all of your last transmission.
Stand By	Means the controller or pilot must pause for a few seconds, usually to attend to other duties of a higher priority. Also means to wait as in "stand by for clearance." The caller should reestablish contact if a delay is lengthy.
Unable	Indicates inability to comply with a specific instruction, request, or clearance.
Verify	Request confirmation of information.
Wilco	I have received your message, understand it, and will comply with it.

Phonetic Aviation Alphabet. Because some letters have similar sounds, like B and P, the international aviation industry uses the following words to reduce confusion. For example; Taxiway B would be referred to as Taxiway Bravo on the radio.

Letter	Phonetic Equivalent
A	ALFA
B	BRAVO
C	CHARLIE
D	DELTA
E	ECHO
F	FOX-TROT
G	GOLF
H	HOTEL
I	INDIA
J	JULIET
K	KILO
L	LIMA
M	MIKE
N	NOVEMBER
O	OSCAR
P	PAPA
Q	QUEBEC
R	ROMEO
S	SIERRA
T	TANGO
U	UNIFORM
V	VICTOR
W	WHISKEY
X	X-RAY
Y	YANKEE
Z	ZULU

ATCT Light Gun Signals. Air traffic controllers have a backup system for communicating with aircraft or ground vehicles if their radios stop working. The controller has a light gun in the tower that can send out different colored lights to tell the pilot or driver what to do. If a vehicle operator experiences a radio failure on a runway or taxiway, the operator should vacate the runway as quickly and safely as possible and contact the ATCT by other means, such as a cellular telephone, and advise the ATCT of the situation. If this is not practical, then the driver, after vacating the runway, should turn the vehicle toward the tower and start flashing the vehicle headlights and wait for the controller to signal with the light gun.

Light gun signals, and their meaning, are as follows:

Light Gun Signal	Meaning
Steady Green	OK to cross runway or taxiway.
Steady Red	STOP!
Flashing Red	Move off the runway or taxiway.
Flashing White	Go back to where you started.
Alternating Red and Green	Use extreme caution.

Safety. The FAA defines a runway incursion as “**Any occurrence at an airport involving an aircraft, vehicle, person, or object on the ground that creates a collision hazard or results in loss of separation with an aircraft taking off or intending to take off, land, or intending to land.**”

Runway incursions are primarily caused by error in one or more of the following areas:

- Pilot/ground vehicle/controller communications
- Airport familiarity
- Loss of situational awareness

An example of an incursion is a vehicle at an airport with an operating ATCT straying onto a runway in front of an aircraft causing the pilot to take an action to avoid a collision.

When driving on the airfield, vehicle operators need to always be aware of their location and the meaning of all pavement markings, lights, and signs. When on the aprons and taxiways, stay away and steer clear of aircraft. **Aircraft always have the right-of-way.**

NOTE: Any individual involved in a runway incursion will receive remedial ground vehicle operations training given by the County of San Diego.

SAMPLE
GROUND VEHICLE OPERATOR'S
TRAINING RECORD

Name: _____

Master Lessee: _____

Company Name: _____

Driver's License State and Number: _____

Driver's License Expiration Date: _____

Proof of liability Insurance: _____

I agree to abide by all rules and regulations prescribed for the operations of a vehicle within the airport operations area. As of this time, I certify that I hold a current and valid driver's license. If for any reason my license becomes invalid, I will notify the County of San Diego immediately. Sign your name and indicate today's date below:

(NAME)

(DATE)

I certify that the above named individual has satisfactorily completed the ground vehicle operation training Program.

Instructor's Name (Printed): _____

Instructor's Signature: _____